



Mitigated Negative Declaration

Sonoma County Permit and Resource Management Department
2550 Ventura Avenue, Santa Rosa, CA 95403
(707) 565-1900 FAX (707) 565-1103

Publication Date: April 1, 2009
Adoption Date: June 12, 2009
State Clearinghouse: 2009042009

File No.: UPE08-0062

Planner: Sigrid Swedenborg

Project Name: Wildhorse Development Project

Project Description: Request for a Use Permit to add up to three new well pads, each approximately two acres in size and 12,600 feet of new access corridors including roads, steamlines and a 21 KV electrical distribution line as part of the Wildhorse Steam Field

Project Location: 7000 Geysers Road, Geyserville, CA

Environmental Finding: The proposed project could not have a significant effect on the environment and the adoption of a Mitigated Negative Declaration is appropriate. Based upon the information contained in the Initial Study included in the project file, it has been determined that there will be no significant environmental effect resulting from this project, provided that mitigation measures are incorporated into the project. The Mitigated Negative Declaration has been completed in compliance with CEQA State and County guidelines and the information contained therein has been reviewed and considered.

Initial Study: Attached

Decision-making Body: Sonoma County Permit and Resource Management Department

Lead Agency: Sonoma County Permit and Resource Management Department

COUNTY OF SONOMA

PERMIT AND RESOURCE MANAGEMENT DEPARTMENT

2550 Ventura Avenue, Santa Rosa, CA 95403
(707) 565-1900 FAX (707) 565-1103

ENVIRONMENTAL CHECKLIST FORM

FILE #: UPE08-0061

PROJECT: Buckeye Development Project

PLANNER: Sigrid Swedenborg

DATE: October 21, 2008

LEAD AGENCY: Sonoma County Permit and Resource Management Department

PROJECT LOCATION: 7000 Geysers Road, Geyserville, CA

APPLICANT NAME: Geysers Power Company, LLC

APPLICANT ADDRESS: 10350 Socrates Mine Road, Middletown, CA 95461

GENERAL PLAN

DESIGNATION: Resource and Rural Development, 320 acre density

ZONING: RRD (Resource and Rural Development) and RRDWA (Resource and Rural Development, Agricultural Preserve), B6-320 acre density

DESCRIPTION OF PROJECT: Request for a Use Permit to add up to three new well pads, each approximately two acres in size and 12,600 feet of new access corridors including roads, steamlines and a 21 KV electrical distribution line as part of the Wildhorse Steam Field

SURROUNDING LAND USES AND SETTING: Briefly describe the project's surroundings:

Land use in the project vicinity is a mix of geothermal power production and hunting. Parcels in the Geysers are large landholdings and are designated Resource and Rural Development in the Sonoma County General Plan.

Other Public Agencies whose approval may be required (e.g. permits, financing approval, or participation agreement): California Regional Water Quality Control Board, North Coast Region (NCRWQCB) Board Order No. R1-2008-0025 for GPC will be subject to revision. A Storm Water Pollution Prevention Plan will be developed; and Notice of Intent submitted when applicable.

The Northern Sonoma County Air Pollution Control District (NSCAPCD) will require a permit for Authority to Construct each of the proposed wells and pipelines. The California Division of Oil, Gas and Geothermal Resources (CDOGGR) will require that a Notice of Intent to Drill be submitted and approved prior to drilling each of the proposed wells and an injection permit for the wells used for condensate or Santa Rosa reclaimed water injection. The California State Lands Commission (SLC) must modify the existing exploratory geothermal lease for the subsurface mineral resources in the Project area.

Any creek crossings will need to be coordinated with the National Marine Fisheries Service and Fish and Wildlife Service through the Corps of Engineers 404 Permit process. The California Department of Fish and Game will also be involved in this process through a Section 1600 Stream Bed Alteration Agreement.

The U.S. Bureau of Land Management will require Geothermal Drilling Permits, Sundry Notices, and a Commercial Use Permit for the wells accessing federal subsurface leases.

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" or "Less than Significant with Mitigation" as indicated by the checklist on the following pages.

<input type="checkbox"/> Aesthetics	<input type="checkbox"/> Agricultural Resources	<input type="checkbox"/> Air Quality
<input checked="" type="checkbox"/> Biological Resources	<input checked="" type="checkbox"/> Cultural Resources	<input checked="" type="checkbox"/> Geology/Soils
<input checked="" type="checkbox"/> Hazards & Hazardous Materials	<input type="checkbox"/> Hydrology/Water Quality	<input type="checkbox"/> Land Use and Planning
<input type="checkbox"/> Mineral Resources	<input checked="" type="checkbox"/> Noise	<input type="checkbox"/> Population/Housing
<input type="checkbox"/> Public Services	<input type="checkbox"/> Recreation	<input type="checkbox"/> Transportation/Traffic
<input type="checkbox"/> Utilities/Service Systems	<input checked="" type="checkbox"/> Mandatory Findings of Significance	

DETERMINATION

On the basis of this initial evaluation:

- ☐ The proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
- ☒ Although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because the revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.
- ☐ The proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
- ☐ The proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed by in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.
- ☐ Although the proposed project could have a significant effect on the environment, all potentially significant effects were previously analyzed in an earlier EIR or Negative Declaration pursuant to applicable standards and potential impacts have been avoided or mitigated pursuant to that earlier EIR or Negative Declaration, including revisions or mitigation measures that are imposed upon the proposed project. There are no changes in the project, no new information related to potential impacts, and no changes in circumstances that would require further analysis pursuant to Section 15162 of CEQA Guidelines, therefore no further environmental review is required.

The environmental documents which constitute the Initial Study and provide the basis and reasons for this determination are attached or referenced herein, and hereby made a part of this document.

Incorporated Source Documents

In preparation of the Initial Study checklist, the following documents were referenced/developed, and are hereby incorporated as part of the Initial Study. All documents are available in the project file or for reference at the Permit and Resource Management Department.

<input checked="" type="checkbox"/>	Project Application and Description
<input checked="" type="checkbox"/>	Sonoma County General Plan and Associated EIR
<input checked="" type="checkbox"/>	Specific or Area Plan
<input checked="" type="checkbox"/>	Sonoma County Zoning Ordinance
<input checked="" type="checkbox"/>	Sonoma County Rare Plant Site Identification Study
<input checked="" type="checkbox"/>	Project Referrals from Responsible Agencies
<input checked="" type="checkbox"/>	State and Local Environmental Quality Acts (CEQA)

- X Seismicity Review prepared for the City of Santa Rosa, CA, IRWP EIR (2007 Addendum)
- X Cultural Resources Assessment Report Calpine Geysers Power Company Wildhorse Project prepared by William Self Associates, Inc., dated September 2008
- X Archaeological Testing at Site P-49-1313 Wildhorse Project prepared by William Self Associates, Inc., dated February 2009
- X Biological Assessment, with Botanical Survey, for the Calpine Wildhorse Project prepared by Northwest Biosurvey, October 9, 2007

EVALUATION OF ENVIRONMENTAL IMPACTS:

- 1) A brief explanation is required for all answers except "No impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g. the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g. the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).
- 2) All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.
- 3) Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.
- 4) "Negative Declaration: Less Than Significant With Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less than Significant Impact." The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level (mitigation measures from Section 17 at the end of the checklist, "Earlier Analysis" may be cross-referenced).
- 5) Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration. Section 15063 (c)(3)(D). In this case, a brief discussion should identify the following: a) Earlier Analysis Used. Identify and state where they are available for review. b) Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis. c) Mitigation Measures. For effects that are "Less than Significant with Mitigation Measures Incorporated", describe the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.
- 6) Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.
- 7) Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.
- 8) This is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a project's environmental effects in whatever format is selected.

9) The explanation of each issue should identify: a) the significance criteria or threshold, if any, used to evaluate each question; and b) the mitigation measure identified, if any, to reduce the impact to less than significance.

1. AESTHETICS

Would the project:

Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Impact	No Impact
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- a) Have a substantial adverse effect on a scenic vista?

_____	_____	_____	<u> X </u>
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Comment: The project site is not located in a Community Separator or Scenic Landscape Unit as defined in the Open Space Element of the Sonoma County General Plan, nor would the project site be visible from a Scenic Corridor as designated in the Plan.

- b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

_____	_____	_____	<u> X </u>
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Comment: The project will not damage a scenic resource. The site is not on a state scenic highway.

- c) Substantially degrade the existing visual character or quality of the site and its surroundings?

_____	_____	<u> </u>	<u> X </u>
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Comment: The project will not substantially degrade the existing visual character or quality of the site and its surroundings. The applicant has stated that pipelines will be painted in earth-tone colors in sections visible to the public, which could include glare from a far distance. Conditions require that woody vegetation and trees shall be planted on the cut and fill slopes where feasible. To the extent possible, colors for project structures shall be selected to minimize contrast with the surrounding environment. Vegetation removal shall be kept to a minimum.

- d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

_____	_____	<u> X </u>	_____
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Comment: Rig lights must be shaded and focused downwards to reduce nighttime glare from the well pads during drilling operations.

2. AGRICULTURE RESOURCES

Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Impact	No Impact
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In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. Of Conservation as an optional model to use in assessing impacts on agriculture and farmland. Would the project:

- a) Convert Prime Farmland, Unique Farmland,

or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?

_____ X

Comment: The project site is not located on agricultural soils and would not affect status farmland or agricultural production.

- b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?

_____ X

Comment: Some of the parcels involved in this request are under a Williamson Act Contract. The Sonoma County Rules and Regulations for Administration of Agricultural Preserves specifically finds that geothermal steam well drilling and the structures, fixtures and equipment for geothermal generation of electricity from steam sources on or under the land on which they are situated is a compatible use with type two agricultural preserves (Board of Supervisors Resolution No. 28631 B. (6) and (7)).

- c) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use?

_____ X

Comment: The project does not involve any changes that could result in the conversion of Farmland to a non-agricultural use.

3. AIR QUALITY

Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Impact	No Impact
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Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:

- a) Conflict with or obstruct implementation of the applicable air quality plan?

_____ X

Comment: The project is within the jurisdiction of the Northern Sonoma County Air Pollution Control District (NSCAPCD). The NSCAPCD does not have an adopted air quality plan. The District will require a permit for an "Authority to Construct" each of the proposed wells and pipelines.

- b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?

_____ X

Comment: The proposal statement includes the following discussion on air emissions: Diesel engine powered equipment used during well drilling will be temporary sources of combustion emissions. Engines considered portable equipment and not subject to stationary source emission standards by the Northern Sonoma County Air Pollution Control District (NSCAPCD) will either be registered in California Air Resources Board (CARB) Portable Equipment Registration program or permitted with NSCAPCD for the scope of the project.

Stationary sources of emissions to air that result from the Project are geothermal production wells and the condensate collection systems constructed for the steam pipelines. The geothermal steam production from the project will supply existing permitted power plants via interconnection to existing

permitted steam pipelines. Emissions associated with operation and maintenance of the project wells and steam pipelines will be limited by Permits to Operate from the NSCAPCD. Authority to Construct permits for each well and steam pipeline constructed will be required by the NSCAPCD to ensure compliance with district rules and emission limits.

Wells under construction during the air-drilling phase and during well testing will be sources of steam containing hydrogen sulfide (H_2S). Initial commissioning of each newly constructed steam pipeline may also be a temporary source of steam containing H_2S . This involves venting steam from the pipeline at a high velocity for several hours to remove construction debris and scale that cannot otherwise be effectively removed.

The air drilling phase of well construction will be a source of particulate matter. This particulate matter originates from well bore cuttings removed with the compressed air and steam. Well testing will be a source of particulate matter originating from the well with the steam. Diesel powered equipment will be a source of particulate matter, a product of combustion.

Serpentine rock containing asbestos may be encountered during well drilling. The Asbestos Air Toxic Control Measure for construction, grading, quarrying and surface mining as approved by the California Air Resources Board shall be used. Field application of paint to pipelines and supports may be a source of volatile organic compounds (VOCs). Painting of the steam pipelines and supports will conform to NSCAPCD Rule 485 for use of compliant architectural coatings. Emissions of H_2S gas will occur during the air drilling phase of well construction and during well testing. Hydrogen sulfide is a natural component of the produced geothermal steam, and effective techniques for abating H_2S emissions during geothermal well drilling and testing activities have evolved in The Geysers. A NSCAPCD approved chemical abatement system will be used to control H_2S emissions during well construction and testing.

During air drilling, the abatement method that will be utilized will be either a scrub and inject or scrub and oxidize method, depending on whether an injection well is available to directly return the steam condensed solution of hydrogen sulfide and sulfide ions back into the geothermal reservoir. The abatement process will consist of injecting a metered stoichiometric amount of aqueous sodium hydroxide (caustic, $NaOH$) into the blooie line to scrub the H_2S from the steam into solution as hydrosulfide and sulfide ions. If an injection well is available the resulting solution will be directly injected into the reservoir. Otherwise a metered injection of stoichiometric amounts hydrogen peroxide (H_2O_2) will be added into the blooie line needed to oxidize the hydrosulfide and sulfide ions to sodium sulfate (Na_2SO_4) that will not revert back to hydrogen sulfide.

The air drilling abatement equipment consists of a 12-14 foot diameter cyclone separator/muffler connected at the end of the blooie line, 2-4 chemical metering pumps, treatment chemicals storage totes, a water storage tank, emergency shower and eyewash facilities, and miscellaneous hoses and fittings. The cyclone separator serves to separate condensate, rock, cutting solids, and any sulfur solids that form in the abatement of steam. Abated steam is exhausted to atmosphere. Condensate, rock and cutting solids are collected in a tank. Solids and particulate matter settle and are transported offsite to the GPC permitted waste management unit in the Geysers. Condensate is recycled/recirculated in the blooie line for reuse in scrubbing H_2S and particulate in the blooie line.

For well testing, H_2S entrained in the steam produced during tests is chemically treated and abated in the same manner as during the air-drilling phase of well construction.

An emerging air quality issue is global climate change and the control of greenhouse gases (GHG) which are causing the change. On a temporary basis, the project will be emitting GHG, mostly from well drilling and well testing. The California Air Resources Board (CARB) will soon be issuing regulations regarding the control and offsetting of GHG. The Applicant shall comply with all applicable rules promulgated under AB 32/SB 375 by CARB regulations regarding GHG emissions.

- c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under

an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?

_____ X _____

Comment: The NSCAPCD is a non-attainment area for Particulate Matter - 10 microns or less (PM10). The Project must comply with the following Dust Control Program, which will reduce PM10 emissions to a level consistent with the Air Pollution Control District's requirements. Based on the temporary traffic volumes for construction crews and equipment expected with this project, (PM10) emissions would not be cumulatively considerable.

The Applicant shall implement the following dust control measures during all construction phases:

- 1) Cover hauling trucks or maintain at least two feet of freeboard.
- 2) Hydroseed or apply non-toxic soil stabilizers to inactive construction areas (previously-graded areas that are inactive for 10 days or more).
- 3) Limit traffic speeds on any unpaved roads to 15 mph.
- 4) Replant vegetation in disturbed areas as quickly as possible.
- 5) Water or spray project work areas and roads during construction when dust becomes a problem. Regularly used areas should be paved or chip-sealed.

- d) Expose sensitive receptors to substantial pollutant concentrations?

_____ X _____

Comment: Sensitive receptors include hospitals, schools, convalescent facilities, and residential areas. The project is not located near any of these sensitive receptors.

- e) Create objectionable odors affecting a substantial number of people?

_____ X _____

Comment: Construction activities generate dust and diesel exhaust emissions. These emissions would be temporary, and would occur during construction. The Project must comply with the following which will reduce PM10 and exhaust emissions to a level consistent with the Air Pollution Control District's requirements. The following are incorporated as conditions of approval for this project:

The Applicant shall implement the following equipment emissions control programs:

- 1) Reduce unnecessary idling of construction equipment.
- 2) Where possible, use newer, cleaner burning diesel-fueled construction equipment.
- 3) Properly maintain construction equipment.
- 4) Well drilling diesel engines shall be required to use ultra-low (15 ppm) sulfur diesel fuel.

See 3 b) above for discussion on H₂S abatement.

4. BIOLOGICAL RESOURCES

Would the project:

Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Impact	No Impact
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- a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

_____ X _____

Comment: The Geysers area contains candidate, sensitive and/or special species of concern that could be impacted by pipeline construction activities. A document titled "Biological Assessment with Botanical Survey for the Calpine Wildhorse Project" was prepared by Northwest Biosurvey. The survey area encompassed 2,407 acres. A full, in-season floristic level survey was conducted within the survey area. The report establishes the following mitigation measures to insure that any potential impacts are less than significant.

Mitigation Measures: Surveys for the following species shall be conducted prior to initiation of construction and shall be coordinated with the appropriate responsible agencies, i.e., U.S. Fish & Wildlife Service and/or California Department of Fish and Game. If active nests are observed within 150 meters (500 feet) of the project site, exclusion zones shall be designated. No construction activities is allowed within the exclusion zone until the following conditions have been met: a) the young have fledged from the nest, b) the birds abandon the nest on their own, c) the nest fails and the birds do not re-nest. A qualified biologist would determine if and when these conditions are met. If target species are found to be absent from the project area, then the applicant shall obtain concurrence from the responsible agencies of that finding prior to proceeding with construction. A report documenting surveys shall be submitted to PRMD.

Sensitive Plants: Construction corridors within populations of Konocti manzanita should be held to a minimum width or re-routed if possible. Prior to construction within the population boundaries, construction zones passing through the population of Konocti manzanita should be marked by a qualified biologist. Portions of the population outside of the construction corridor should be protected with construction fencing. Potential impacts to this large population should be less than significant with these measures in place.

Birds: Yellow Warbler and Common Yellowthroat: Any work proposed within riparian woodland habitat between April 1 and August 31 should be preceded by a survey for these two birds. In the event that either of these species is determined to be nesting within 200 feet of proposed construction activities, construction should be delayed until after August 31, or until fledging is completed as determined by a qualified biologist.

Purple Martin: Any work proposed within black oak/canyon live oak/Douglas fir habitat between April 1 and August 31 should be preceded by a survey for nests and/or colony nests of this species. In the event that this species is determined to be nesting within 200 feet of proposed construction activities, construction should be delayed until after August 31, or until fledging is completed as determined by a qualified biologist.

Northern Spotted Owl: Any work proposed within Douglas fir forest should be preceded by an in-season spotted owl survey conducted pursuant to U.S. Fish and Wildlife Service protocol. In the event that spotted owls are determined to be present within the contiguous Douglas fir forest, proposed work should proceed pursuant to recommendations from the U.S. Fish and Wildlife Service following a consultation with that agency.

Cooper's Hawk and White-tailed Kite: Any work proposed in woodland habitat within 300 feet of Squaw Creek or Big Sulphur Creek between April 1 and August 31 should be preceded by a survey for these species. In the event that either of these species is determined to be nesting within 300 feet of proposed construction activities, construction should be delayed until after August 31, or until fledging is completed as determined by a qualified biologist.

Sharp-shinned Hawk: Any work proposed in knobcone pine forest, ponderosa pine forest, Douglas fir forest, or riparian woodland, between April 1 and August 31 should be preceded by a survey for this species. In the event that the species is determined to be nesting within 300 feet of proposed construction activities, construction should be delayed until after August 31, or until fledging is completed as determined by a qualified biologist.

Mitigation Monitoring: PRMD staff shall review the reports and coordinate with U.S. Fish & Wildlife Service and/or California Department of Fish and Game to insure that no construction occurs until fledging is completed.

- b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service? _____ X _____

Comment: The Biological Assessment recommended the following conditions:

Fish: In order to mitigate impacts to Central Coast ESU steelhead, the design, construction techniques, and construction timing of any crossings should be coordinated with the National Marine Fisheries Service and Fish and Wildlife Service through the Corps of Engineers 404 Permit process. The California Department of Fish and Game will also be involved in this process through a Section 1600 Streambed Alteration Agreement. Mitigation through these agencies is likely to involve seasonal restrictions during spawning and inclusion of specific design features for stream diversion during construction. Work within any headwater stream should incorporate extensive erosion and sediment control measures.

Amphibians, Reptiles: If construction of crossings of perennial streams is planned within the survey area between April 15 and August 31, the work should be preceded by a survey for foothill yellow-legged frog eggs or larvae within the proposed disturbance zone, and for a distance of 100 feet downstream. If these are found within the proposed construction zone, work should be postponed until larval development is completed or until after August 31. Any work involving the closure or modification of existing abandoned sumps containing ponded water should be preceded by a survey for northwestern pond turtles. In order to avoid the destruction of nests, it is recommended that modification of sumps occur prior to egg laying, which is likely to begin in this area in early May. Consequently, modification of sumps should occur during the month of April and incorporate extensive erosion control measures due to the potential for rains during construction. Construction should be preceded by draining the sump and removal and relocation of any turtles to the closest existing ponded sump or ponded, slow-moving section of perennial stream channel.

Additional SCAMP (Squaw Creek Aquatic Monitoring Program) stations and parameters may be added if determined necessary by the California Department of Fish and Game and PRMD on an incremental basis as the well pads, pipelines or access roads are constructed.

- c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means? _____ X _____

Comment: The Biological Assessment did not identify any vernal pool habitat in the project area. See condition under 4b), for mitigations of potential water crossings.

- d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites? _____ X _____

Comment: No terrestrial species in the region utilize or rely upon specific major migration or travel corridors in the Geysers. See condition under 4b), for mitigations of potential water crossings.

- e) Conflict with any local policies or ordinances protecting biological resources, such as tree preservation policy or ordinance? _____ X _____

Comment: The project is subject to the Tree Protection and Replacement Ordinance. Any protected trees removed must be replaced per ordinance requirements.

- | | | | | |
|--|-------|-------|-------|---|
| f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state Habitat conservation plan? | _____ | _____ | _____ | X |
|--|-------|-------|-------|---|

Comment: There are no known regional or state habitat conservation plans for this area.

5. CULTURAL RESOURCES

Would the project:

- | | Potentially
Significant
Impact | Less than
Significant
with
Mitigation
Incorporation | Less than
Significant
Impact | No
Impact |
|---|--------------------------------------|---|------------------------------------|--------------|
| a) Cause a substantial adverse change in the significance of a historical resource as defined in § 15064.5? | _____ | X | _____ | _____ |

Comment: A site-specific Cultural Resources Assessment Report was prepared by William Self Associates (WSA), Inc. dated September 2008, to identify and analyze the potential impacts to cultural resources in the area of the project. Nineteen cultural resource studies have been conducted in or within a 1/4 mile radius of the project area. WSA determined that three sites (P-49-776, P-49-777 and P-49-1313) are potential significant resources. WSA noted that the preferred protection measure of the sites is complete avoidance to insure that no adverse impacts will occur to the sites. Two of the sites (P-49-776, P-49-777) do not appear to be located in areas of proposed construction and may easily be avoided. However, if construction will occur within 100-feet of the resource, the recorded boundary of the resource should be flagged to ensure that construction personnel and others do not enter the site during construction. In addition, all ground-disturbing construction activities (grading, brush clearing, excavation, etc.) within 100-feet of the resource should be monitored by a qualified archaeologist to ensure resource components are not present outside the recorded boundaries.

A portion of Site P-49-1313 is located at the tip end of a designated spoils area, although it has never been used for spoils, and will most likely not be used with this project. However, the report on Archaeological Testing of this site recommends that the site be listed in the NRHP (National Register of Historic Places) and a significant resource for listing in the CRHR (California Register of Historical Resources). The preferred protection measure for the sites is complete avoidance to insure that no adverse impacts will occur to the sites. If avoidance of a resource is a feasible alternative, but construction will occur within 100 feet of the resource, the recorded boundary of the resource should be flagged to ensure that construction personnel and others do not enter the site during construction. In addition, all ground-disturbing construction activities (grading, brush clearing, excavation, etc.) within 100 feet of the resource should be monitored by a qualified archaeologist to ensure resource components are not present outside the recorded boundaries.

The following mitigation measure has been established to reduce potential impacts:

Mitigation Measure: If avoidance of the archaeological site designated as P-49-1313 is not feasible, then treatment under Section 106 of the NHPA should be conducted in those areas of site that will be adversely affected by project construction, i.e., in areas where there is a need to clear brush, level the terrain, or create any other ground disturbance in association with the construction of the spoils site. Such treatment would consist of data recovery, which would entail manual, controlled archaeological excavation of the areas within the site that would be impacted by construction activities. Data recovery would be conducted to the depth and extent of construction impacts, and would include the collection and analysis of artifacts and samples of other material (soil, carbon, etc.) that would be useful in addressing research questions.

Mitigation Monitoring: Grading permits for the Wildhorse Project spoils site shall be reviewed by an archaeologist to ascertain potential impacts and establish if site P-49-1313 will be disturbed. If it is determined that impacts are unavoidable, data recovery shall be done. Grading permits cannot be issued for this well site unless and until clearance is obtained from an archeologist. An archeologist be on site during all grading activities.

- b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5? _____ X _____

_____ **Comment:** As noted above, the survey conducted by William Self Associates, Inc. recommended several protective measures. See mitigation measures established under 5a.

The following condition has been established to protect cultural resources that may be discovered during construction: The following note shall be placed on all construction plans and provided to all contractors and superintendents on the job site. "In the event that the archaeological features such as pottery, arrowheads, midden or culturally modified soil deposits are discovered at any time during grading, scraping or excavation within the property, all work should be halted in the vicinity of the find and County PRMD - Project Review staff shall be notified and a qualified archaeologist shall be contacted immediately to make an evaluation of the find and report to PRMD. PRMD staff may consult and/or notify the appropriate tribal representative from the tribes known to PRMD to have interests in the area. Artifacts associated with prehistoric sites include humanly modified stone, shell, bone or other cultural materials such as charcoal, ash and burned rock indicative of food procurement or processing activities. Prehistoric domestic features include hearths, firepits, or house floor depressions whereas typical mortuary features are represented by human skeletal remains. Historic artifacts potentially include all by-products of human land use greater than fifty (50) years of age including trash pits older than fifty (50) years of age. When contacted, a member of PRMD Project Review staff and the archaeologist shall visit the site to determine the extent of the resources and to develop and coordinate proper protection/mitigation measures required for the discovery. PRMD may refer the mitigation/protection plan to designated tribal representatives for review and comment. No work shall commence until a protection/mitigation plan is reviewed and approved by PRMD - Project Review staff. Mitigations may include avoidance, removal, preservation and/or recordation in accordance with California law. Archeological evaluation and mitigation shall be at the applicant's sole expense.

If human remains are encountered, all work must stop in the immediate vicinity of the discovered remains and PRMD staff, County Coroner and a qualified archaeologist must be notified immediately so that an evaluation can be performed. If the remains are deemed to be Native American, the Native American Heritage Commission must be contacted by the Coroner so that a "Most Likely Descendant" can be designated and the appropriate provisions of the California Government Code and California Public Resources Code will be followed."

In the event that any construction access corridor or other land disturbance in the project area falls outside the project archeological study area, additional surveys shall be conducted by a qualified archaeologist and submitted to the Sonoma County Permit and Resource Management Department.

- c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature? _____ X _____

_____ **Comment:** Grading, drilling, and other ground disturbing activity could have the potential to impact unknown paleontological resources, as the underlying geologic unit may contain fossils. The following condition has been established to protect paleontological resources that may be discovered during construction:

The following note must be placed on the plans for the well drilling: "If paleontological resources are identified during drilling, work shall cease, and PRMD staff shall be notified so that the find can be

evaluated by a qualified paleontologist to recover the resources and provide for their proper curation."

- d) Disturb any human remains, including those interred outside of formal cemeteries? _____ X _____

Comment: There is no evidence that the project area contains a burial site. State law requires that, if during ground disturbing activities human remains or funerary objects are found, all work must be halted and the County Coroner notified.

6. GEOLOGY AND SOILS

Would the project:

Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Impact	No Impact
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- a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:
- i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.

_____ X _____

Comment: Although many faults run through the geothermal area, there are no Alquist-Priolo Earthquake Fault Zones.

- ii) Strong seismic ground shaking? _____ X _____

Comment: Induced seismicity was reviewed in the IRWP EIR and the subsequent 2007 Addendum. The 2007 Addendum was approved by the City of Santa Rosa on August 14, 2007 and evaluated impacts of increased recycled water deliveries to the Geysers steam field up to an annual average of 19.8 mgd. Coverage area of the addendum document included both the Wildhorse and Buckeye steam fields and evaluated the seismic response of the field and its impact to nearby communities to increased injection for the purpose of increasing geothermal steam production. The cumulative impact of both projects (Wildhorse and Buckeye) is within the scope of these evaluations and does not represent additional impacts over those predicted in the City of Santa Rosa's IRWP EIR. Thus these projects are not expected to cause a significant increase in induced seismicity.

This impact will be further mitigated by the following:

Mitigation Measure: Monitor Seismic Events and Adjust Injection Rates

The Applicant shall reduce effects of induced seismicity from injection at the Geysers steam field, to the extent feasible. The purpose of this mitigation measure is to minimize increased felt seismic activity, while maintaining the full level of injection.

The Applicant shall determine which injection wells are more susceptible to felt induced seismicity and decrease injection at wells that produce higher levels of felt induced seismicity and increase injection at wells located farther from residences and/or produce fewer seismic events. Success of redistribution of water and any other modifications in operations in reducing felt seismic events shall be continually evaluated so that the program can become more effective.

Mitigation Monitoring: The project operators shall prepare and submit reports to the City of Santa Rosa twice a year. The reports shall include a description of revised operations intended to reduce felt seismic activity, time-series plots showing daily volume of injection at each well together with associated seismic event counts, and tables and plots of seismicity (magnitude 1.5 and greater) within a two kilometer control radius of injection wells. The reports shall also include tables and plots of seismicity associated with production wells, and shall evaluate seismicity in the injection well study areas both with and without consideration of the influence of production wells.

iii) Seismic-related ground failure, including
liquefaction? _____ X _____

Comment: The entire project area is a very low risk for liquefaction. Therefore, no significant liquefaction hazard would result.

iv) Landslides? _____ X _____

Comment: Per the IRWP EIR, the Geysers area is mapped as *Mostly Landslides* or *Many Landslides* with only a few small areas of *Few Landslides*. (Pg. 4.3-81) The IRWP EIR established a Mitigation Measure for Slope Stabilization Design, with several measures for slope stabilization to reduce potential impacts to less than significant.

Mitigation Measure: If the project engineer identifies hazards due to unstable slopes, the engineer shall identify slope stability risks and geotechnical investigations shall be provided including engineering design and construction recommendations to stabilize slopes facilities. One or more of the following measures, or alternative measures of equivalent effectiveness, shall be implemented, depending upon their applicability to site-specific conditions:

- Removal and replacement of unstable materials in an existing landslide with a stronger material.
- Grading to remove loose material and provide an acceptably stable topographic configuration by terracing, reducing slope angles, and reducing the height of cut and fill slopes.
- Installation of drainage facilities, such as subdrains and dewatering wells to reduce pore water pressure and reduce the risk of slope failure.
- Covering steep slopes with concrete or vegetation
- Buttrassing the toe of slopes to provide additional support to the slope. Where buttrassing is not feasible, internal reinforcement such as a pinning system or lattice grid can be incorporated into the slope design to strengthen the slope.
- Retaining walls or other external applications to strengthen slopes.
- Placement of slope fencing or other material to stabilize rock fall from cut slope and mitigate hazards from falling rocks.
- For above ground pipelines in the Geysers Steamfield, installation of the pipeline on a sliding support and saddle system.
- Where facilities must be located in unstable areas, a slope stability monitoring system must be installed. The system may include slope inclinometers to measure changes in slope angles and piezometers to measures changes in water levels and pore water pressure that could indicate active slope movement. The monitoring system would provide advanced warning of slope failure that could damage facilities. If accelerated slope movement is detected, then immediate corrective action, such as pipe maintenance or activation of isolation valves and draining of pipeline segments, shall occur.

Mitigation Monitoring: Construction plans shall include recommendations from any geotechnical report.

b) Result in substantial soil erosion or the loss
of topsoil? _____ X _____

Comment: Construction may result in soil erosion and the loss of topsoil. Due to Best Management Practice requirements and the requirement that erosion control measures be implemented, impacts of erosion and the loss of topsoil will be less than significant.

The applicant must submit a SWPP Notice of Intent (NOI) to the California Regional Water Quality Control Board for construction of the projects involving soil disturbances in excess of applicable thresholds. A SWPP Control Plan must be prepared and Best Management Practices must be instituted for the erosion and sedimentation control. Each of the existing well sites and access roads have been the subject of civil engineering and geotechnical design for stability and to prevent adverse effects from erosion. Each of the new sites and access roads will be evaluated and designed for stability to prevent adverse effects from erosion by a civil engineer. During drilling operations, each pad will be surrounded by an eighteen-inch dirt berm to contain any spills and storm water runoff. In addition, the following short-term and long term erosion control measures will be adopted.

SHORT TERM EROSION CONTROL MEASURES

Depending on the time of year, the following erosion control measures will be used:

- Soil exposure will be kept to a minimum
- Temporary sloping will be used on the rough graded pads and fill slopes and construction access roads to avoid concentrations of surface water from flowing over slopes
- Temporary drainage diversion ditches and berms will be installed
- Wattles, rock socks and/or straw bale silt dams will be used for reducing sediment into streams and/or creeks
- Jute-mesh, rolled straw and/or hydro-mulching will be used on slopes
- A contingency plan will be in place for winterization of rough graded surfaces incorporating the erosion control measures described above.

LONG-TERM EROSION CONTROL MEASURES

- A compacted aggregate base material for the pad surfaces
- Earth berms around the periphery of the pads
- Appropriate drainage control to intercept surface water from the top of cut slopes
- V-ditches shall be stabilized to minimize erosion
- Hydro-mulch vegetative cover

If a development well does not meet commercial production requirements and would not be suitable as a steam production, injection or observation well, then the well shall be plugged and abandoned in conformance with CDOGGR/BLM requirements. A proposal for abandonment must be submitted to the CDOGGR for review and approval. The well pads, pipeline and access routes will be restored as required by Sonoma County PRMD, the surface landowner and any other associated permitting agencies.

- c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?

_____ X _____

Comment: See response to 6.a.(i) thru (iv).

- d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?

_____ X _____

Comment: Expansive soils are common throughout the Geysers area and proposed facilities could be exposed to them. Standard Engineering Methods for Expansive Soils should be incorporated if

expansive soils are encountered. The following engineering methods shall be used to substantially lessen or avoid potential impacts from expansive soils:

- 1) Removal of native soil and replacement with an engineered fill material not prone to shrinking and swelling;
 - 2) Soil stabilization, such as lime treatment to alter soil properties to reduce shrink-swell potential to an acceptable level; or
 - 3) Deepening footings or other support structures in the expansive soil to a depth where soil moisture fluctuation is minimized.
- e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water? _____ X _____

Comment: The project does not include use of septic tanks, alternative waste water disposal systems or sewers.

7. HAZARDS AND HAZARDOUS MATERIALS

- | Would the project: | Potentially
Significant
Impact | Less than
Significant
with
Mitigation
Incorporation | Less than
Significant
Impact | No
Impact |
|---|--------------------------------------|---|------------------------------------|--------------|
| a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials? | _____ | _____ | <u> X </u> | _____ |

Comment: Construction activities for the project shall be conducted in accordance with state and federal regulations regarding hazardous materials and would not impact public safety. The applicant shall comply with applicable hazardous waste generator, underground storage tank, above ground storage tank and AB2185 (hazardous materials handling) requirements and maintain any applicable permits for these programs from the Hazardous Materials Division of Sonoma County Department of Emergency Services. Rock cuttings will be generated during the drilling of each well. All drill cuttings will be hauled either to the geothermal drilling mud and cuttings disposal area (GDMACDA) Waste Management Unit or to the Class II Solid Waste Management Facility. Both facilities are owned and operated by GPC and located in The Geysers. The facilities are permitted by the California Regional Water Quality Control Board, North Coast Region and Sonoma County Environmental Health (Lead Enforcement agency for the Integrated Waste Management Board) to accept non-hazardous drilling wastes. Cuttings will be analyzed upon completion of each well to confirm they are non-hazardous under California Title 22 regulations prior to permanent disposal in these facilities. Any hazardous wastes that may be generated by the project will be handled in accordance with federal and state law and in general will be transported offsite to a Class I disposal facility. The transportation of equipment and materials associated with this proposal over the public roads of the County of Sonoma may be subject to a transportation permit. The project owner and/or its contractors and subcontractors shall comply with all requirements or regulations of any state or federal agency with respect to the handling and transport of hazardous materials.

- b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment? _____ X _____

Comment: See Comment 7.a). The project will not employ any hazardous materials of sufficient volatility or quantity to cause a hazard to the public.

A Spill Prevention Control and Countermeasure Plan (SPCC) for the proposed project will be prepared to address all petroleum products and spill response. The SPCC covers the storage and handling of petroleum hydrocarbons including diesel fuel and oils that may be used during construction and well drilling and testing operations. A Hazardous Materials Business Plan applicable to the proposed project is/will be on file with Sonoma County for hazardous materials that may be used and stored on site within the proposed project locations in The Geysers.

- c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school? _____ X

Comment: The subject property is not within a one-quarter mile of an existing or proposed school.

- d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment? _____ X

Comment: The site is not identified as a hazardous materials site under Government Code Section 65962.5.

- e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area? _____ X

Comment: The project is outside of the Sonoma County Airport Land Use Commission's referral area boundary for any public use airport and is not within two miles of a public airport.

- f) For a project located within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area? _____ X

Comment: The project is not located within the vicinity of a known private airstrip.

- g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan? _____ X

Comment: The project will not impact any emergency response or evacuation plans.

- h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands? _____ X _____

Comment: The project area is located within wildland areas that may contain substantial forest fire risks and hazards. The impact would be temporary during construction, but because construction activities might bring ignition sources into high fire hazard areas, mitigation requires procedures to manage ignition sources and reduce the risk and hazard from wildland fires to a less than significant level. The applicant's proposal statement includes the following:

"Existing GPC Corporation health and safety procedures provide plans that address prevention of fires in The Geysers. Each of these plans will be applicable to the proposed project.

Fire Prevention Plan (HSP-60): This Plan identifies potential fire hazards; flammable materials; potential ignition sources; control, handling and storage methods; and training requirements associated with geothermal operations that are applicable to all GPC personnel and contract employees working in The Geysers.

Hot Work Permit Procedure (No. 145): This Plan sets forth a permit system for controlling primary work-related sources of fire and the potential fire hazards associated with Hot Work (i.e., welding, soldering, grinding or use of an open flame) applicable to all GPC personnel and contract employees working in The Geysers.

The GPC Geysers Emergency Preparedness and Response Plan contains the Response to Wild Land Fire section that provides procedures to be taken by GPC employees to fight incipient fires and/or isolate and control a wild land fire until outside help arrives."

The following Mitigation Measure will insure that the potential impacts related to the project are less than significant:

Mitigation Measure: The applicant shall remove and clear away dry, combustible vegetation from construction sites in the project area that contains substantial forest fire risks and hazards, or are very high fire hazard severity zones as defined by California Division of Forestry and Fire Protection. Grass and other vegetation less than 18 inches in height above the ground may be maintained where necessary to stabilize the soil and prevent erosion. Vehicles shall not park in areas where exhaust systems contact combustible materials. Fire extinguishers shall be available on the construction site when working in high fire hazard areas to assist in quickly extinguishing any small fires. The Construction Manager shall have on site the phone number for the local fire department(s) and shall have a phone available when working in high fire hazard areas should additional fire fighting capabilities be required.

In addition, firebreaks of 30-150-feet of cleared land around each structure will be established and a general fire prevention protection plan will be submitted to Cal Fire. Cal Fire will be notified at least 30 days prior to starting construction and the applicant will participate in the Cal Fire vegetation management program.

Mitigation Monitoring: If evidence is submitted to PRMD that these procedures are not being followed, the Use Permit is subject to revocation.

8. HYDROLOGY AND WATER QUALITY

Would the project:

	Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements?	_____	_____	<u> X </u>	_____

Comment: The project will not violate any water quality standards or waste discharge requirements. California Regional Water Quality Control Board, North Coast Region (NCRWQCB) Board Order No. R1-2008-0025 for GPC will be subject to revision. A Storm Water Pollution Prevention Plan will be developed; and Notice of Intent submitted when applicable.

No water extractions from creeks or streams will be made. Any potential pipeline corridors that cross creeks will span the creek or will be placed along an existing road crossing. Additional SCAMP stations and parameters may be added if determined necessary by the California Department of Fish and Game and PRMD on an incremental basis as the well pads, pipelines or access roads are constructed. A long-term program for maintenance of drainage facilities will be established. This program will include frequent inspection of culverts for clogging and accumulation of debris.

- b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted? _____ X _____

Comment: In their Waste Discharge Requirements adopted for the existing Geysers Project, the North Coast Regional Water Quality Control Board concluded that "the proposed Calpine design would have no impact to groundwater from construction and operation of the distribution pipelines. No regional groundwater aquifers of significant yield have been reported in the Mayacamas Mountains near The Geysers". Although water wells may be drilled, the distance to any off-site users is so great and, given the geomorphology of the area, it is extremely unlikely that there would be an impact to other wells.

- c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site? _____ X _____

Comment: The project will not alter the existing drainage pattern on the site. Proposed construction will utilize Best Management Practices to reduce erosion or siltation on- or off-site.

- d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site? _____ X _____

Comment. The project will not alter the existing drainage pattern. The project would not release water to the surface environment. Pipelines carrying steam or condensate will not release liquids to the environment.

- e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff? _____ X _____

Comment: The proposed project would not release water to the surface environment. Pipelines carrying steam or condensate will not release liquids to the environment. The Project must comply with a Stormwater Pollution Prevention Plan that requires stormwater controls during construction, and will reduce stormwater capacity impacts to less than significant. The project would not create polluted runoff water.

- f) Otherwise substantially degrade water quality? _____ X _____

Comment: The project development requires permits to be approved by the North Coast Regional Water Quality Control Board. Compliance with State and County Standards will insure that potential impacts to water quality will be avoided.

- g) Place housing within a 100-year hazard area

as mapped on a federal Flood Hazard Boundary
or Flood Insurance Rate Map or other
flood hazard delineation map? _____

X

Comment: There is no housing associated with the project.

- h) Place within a 100-year flood hazard area
structures which would impede or redirect
flood flows? _____

X

Comment: No structures would be placed within any flood plains.

- i) Expose people or structures to a significant
risk of loss, injury or death involving flooding,
including flooding as a result of the failure of
a levee or dam? _____

X

Comment: The project is not in an area subject to flooding.

- j) Inundation by seiche, tsunami, or mudflow? _____

X

Comment: The project area is not subject to seiche, tsunami or mudflow.

9. LAND USE AND PLANNING

Would the project:

Potentially
Significant
Impact

Less than
Significant
with
Mitigation
Incorporation

Less than
Significant
Impact

No
Impact

- a) Physically divide an established community? _____

X

Comment: The project is located in a rural area outside of established communities.

- b) Conflict with any applicable land use plan, policy,
or regulation of an agency with jurisdiction over
the project (including, but not limited to the general
plan, specific plan, local coastal program, or
zoning ordinance) adopted for the purpose of
avoiding or mitigating an environmental effect? _____

X

Comment: The construction and operation of the project would not conflict with any applicable land
use plans or policies.

- c) Conflict with any applicable habitat conservation
plan or natural community conservation plan? _____

X

Comment: There are no known habitat conservation plans or natural community conservation plans
in the project area.

10. MINERAL RESOURCES

Would the project:

Potentially
Significant
Impact

Less than
Significant
with
Mitigation
Incorporation

Less than
Significant
Impact

No
Impact

- a) Result in the loss of availability of a known
mineral resource that would be of value to the
region and the residents of the state? _____

X

Comment: The project will not result in the loss of a mineral resource.

- b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan? _____ X

Comment: The Sonoma County General Plan does not designate the project area as within a known mineral resource deposit recovery site.

11. NOISE

Would the project result in:

- | | Potentially
Significant
Impact | Less than
Significant
with
Mitigation
Incorporation | Less than
Significant
Impact | No
Impact |
|---|--------------------------------------|---|------------------------------------|--------------|
| a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies? | _____ | <u> X </u> | _____ | _____ |

Comment: The following measures will be adhered to to minimize noise from the drill rig during drilling and testing operations where there is potential exposure to residential receptor:

- Shielding of drill rig motor and air compressors: When practicable, set up the drill rig so that it acts as a barrier to shield noise from the motor and compressors from receptors.
- Buffer metallic surfaces: if needed, cover V-door and drill rig floor with rubber or wood to reduce impact noise from pipes against these metal surfaces.
- Enclose Rig Floor: if needed, enclose rig floor with sound panels including the V-door opening.
- Muffle connection equipment: install mufflers around pipe connection equipment such as air tuggers and winches.
- Install check valve: install a check valve in the drill string to slowly bleed off air pressure and reduce high pressure release noise.
- Bleed air pressure through cyclone muffler: reduce pressure release noise by bleeding air pressure through the blooie line rather than the rig floor.
- Pipe Handling: implement procedures for handling drill pipe that minimize contact with metal surfaces, i.e., on the V-door and catwalk.
- During air drilling, the rig will be outfitted with a blooie line and cyclonic separator/muffler designed to reduce noise from the release of steam. Similarly, during well testing a portable blooie line and muffler will be utilized to reduce steam release noise.
- Rig Crew training: train all rig crews in noise awareness."

The following mitigations will further insure that potential noise impacts are less than significant:

Mitigation Measure: Noise shall be controlled in accordance with the standards set in the Noise Element of the Sonoma County General Plan.

Mitigation Monitoring: Any noise complaints will be investigated by PRMD staff. If such investigation indicates the appropriate noise standard levels have been or may be exceeded, the permit holders shall be required to install, at their expense, additional professionally designed noise control measure(s). Failure to install the additional noise control measure(s) will be considered a violation of the use permit conditions. If noise complaints continue, PRMD shall investigate complaints. If violations are found, PRMD shall seek voluntary compliance from the permit holder and thereafter may initiate an enforcement action and/or revocation or modification proceedings, as appropriate.

- b) Exposure of persons to or generation of excessive groundborne vibration or ground

borne noise levels? _____ X

Comment: The only potential source of excessive groundborne vibration levels would be blasting. No blasting is required for this project.

- c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project? _____ X

Comment: The project is located at a considerable distance from residential communities. It is unlikely that the project will cause a permanent increase in noise levels.

- d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project? _____ X

Comment: There will be a temporary increase in noise due to construction related to drilling, well testing and venting, road and pipeline construction. The distance to residential receptors is far enough away that construction noise should be less than significant. The increase would be reduced to less than significant due to the project description and with the mitigations established in 11 a).

- e) For a project located within an airport land use plan or, where such plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels? _____ X

Comment: The project site is not within the Sonoma County Airport Land Use Plan or within two miles of a public airport.

- f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels? _____ X

Comment: The project is not located within the vicinity of a known private airstrip.

12. POPULATION AND HOUSING

Would the project:

	Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Impact	No Impact
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- a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)? _____ X

Comment: The project would not directly or indirectly induce substantial population growth in the area because it would not add to local housing or provide infrastructure needed to support the development of new housing.

- b) Displace substantial numbers of existing housing necessitating the construction of replacement housing elsewhere? _____ X

Comment: The project would not displace existing housing or necessitate the construction of housing elsewhere.

- c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?

_____ X

Comment: The project would not displace people or necessitate the construction of housing elsewhere.

13. PUBLIC SERVICES

	Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Impact	No Impact
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
Fire protection?	_____	_____	<u> X </u>	_____
Police protection?	_____	_____	_____	<u> X </u>
Schools?	_____	_____	_____	<u> X </u>
Parks?	_____	_____	_____	<u> X </u>
Other public facilities?	_____	_____	_____	<u> X </u>

Comment: The project will not require additional public services or new or physically altered governmental facilities. The project would not have a substantial adverse effect on associated governmental facilities, therefore a potential impact to these agencies is considered less than significant.

14. RECREATION

	Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Impact	No Impact
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	_____	_____	_____	<u> X </u>
Comment: The proposed project is not located near any neighborhood or regional parks. It would not cause an increase in the use of parks in the area.				
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	_____	_____	_____	<u> X </u>

Comment: No recreation facilities are proposed with the project.

15. TRANSPORTATION/TRAFFIC

Would the project:

	Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Impact	No Impact
a) Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?	_____	_____	<u> X </u>	_____
Comment: The project description states that peak construction related commute traffic would be 54 trips per day, estimated at 17 trips per day from the Geysers Road access and 37 trips per day from the Lake County access. These minimal construction-related trips will not cause a substantial traffic increase.				
b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?	_____	_____	_____	<u> X </u>
Comment: The project will not change a level of service on or near a designated road or highway.				
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	_____	_____	_____	<u> X </u>
Comment: The project would not result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks.				
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	_____	_____	_____	<u> X </u>
Comment: The Transportation and Public Works Dept. has determined that the project will not increase hazards. Subcontractors will be required to schedule truck trips so as to minimize conflicts with local school districts.				
e) Result in inadequate emergency access?	_____	_____	_____	<u> X </u>
Comment: This project does not involve any changes that could result in inadequate emergency access.				
f) Result in inadequate parking capacity?	_____	_____	_____	<u> X </u>
Comment: This project will not result in a need for parking.				
g) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?	_____	_____	_____	<u> X </u>

Comment: The proposed project does not conflict with alternative transportation plans or policies.

16. UTILITIES AND SERVICE SYSTEMS

Would the project:

	Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Impact	No Impact
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	_____	_____	_____	<u> X </u>

Comment: The North Coast Regional Water Quality Control Board (NCRWQB) has issued Waste Discharge Orders (Board Order No. R1-2008-0025 for Geysers Power Company) and will be revising them to include the proposed project.

b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	_____	_____	_____	<u> X </u>
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Comment: The project would not create a need for new water or wastewater treatment facilities.

c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	_____	_____	_____	<u> X </u>
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Comment: The project will not require the expansion of any public stormwater system or cause significant environmental effects.

d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	_____	_____	_____	<u> X </u>
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Comment: Bottled water will be provided for temporary construction workers.

e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	_____	_____	_____	<u> X </u>
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Comment: The project will not be served by a wastewater treatment provider.

f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	_____	_____	_____	<u> X </u>
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Comment: Sonoma County has a solid waste management program in place that provides solid waste collection and disposal services for the entire County. The program can accommodate the permitted collection and disposal of the small amount of construction waste that will result from the proposed project.

g) Comply with federal, state, and local statutes and regulations related to solid waste?	_____	_____	<u> X </u>	_____
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Comment: Approximately 700 cubic yards of rock cuttings will be generated during the drilling of each well. All drill cuttings will be hauled either to the geothermal drilling mud and cuttings disposal area (GDMACDA) Waste Management Unit or to the Class II Solid Waste Management Facility. Both

facilities are owned and operated by GPC and located in The Geysers. The facilities are permitted by the California Regional Water Quality Control Board (RWQCB) North Coast Region and the Sonoma County Health Dept. to accept non-hazardous drilling wastes. Cuttings will be analyzed upon completion of each well to confirm they are non-hazardous under California Title 22 regulations prior to permanent disposal in these facilities. Any hazardous wastes that may be generated by the Project will be handled in accordance with federal and state law and in general will be transported offsite to a Class I disposal facility."

17. **MANDATORY FINDINGS OF SIGNIFICANCE**

Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Impact	No Impact
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- a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory? _____ X _____ _____

Comment: See Biology section above for a discussion of biological impacts of the project, including those on special status species. Implementation of the mitigation measures listed in the biology section will avoid or reduce impacts to less than significant levels. Mitigation measure have been established to insure that potential impacts to archeological sites will be less than significant.

- b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)? _____ X _____ _____

Comment: Induced seismicity is a potentially significant effect on the environment. This project is several miles from communities in Lake County and there is a negative net balance from the reservoir with the Wildhorse steamfield (and cumulatively with the Buckeye steam field project) so that additional water from the City of Santa Rosa recycled water project is a necessary component of restoring the reservoir mass water balance. Mitigation Measure 6.a. ii has been established to monitor seismic events and adjust injection rates to reduce effects of induced seismicity from injection.

- c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly? _____ _____ X _____

Comment: The project will result in only minimal changes to the existing environment. Mitigation Measures 11.a) will insure that potential noise impacts are controlled in compliance with the standards established in the General Plan.